Claims As Amended

1. (Currently Amended) A biocompatible tissue repair stimulating implant, comprising:

a bioabsorbable polymeric foam component having pores with an open cell pore structure;

a mesh reinforcing component formed of a biocompatible, mesh ~~containing~~ material having a mesh density in the range of about 12 to 80%,

wherein the foam component is integrated with the mesh ~~reinforcing component~~ such that the pores of the foam component penetrate the mesh of the reinforcing component and interlock with the reinforcing component; and

at least one biological component in association with the implant.

2. (Original) The implant of claim 1, wherein the biological component is contained within pores of the foam component.

3. (Original) The implant of claim 2, wherein the biological component is selected from the group consisting of antibiotics, antimicrobial agents, an anti-inflammatory agents, growth factors, hormones, cytokines, proteins, glycosaminoglycans, immunosuppressants, nucleic acids, analgesics, cell types, and combinations thereof.

4. (Original) The implant of claim 3, wherein the protein is selected from the group consisting of a pleiotrophin, endothelin, tenascin, fibronectin, fibrinogen, vitronectin, V-CAM, I-CAM, N-CAM, elastin, fibrillin, laminin, actin, myosin, collagen, microfilament, intermediate filament, antibody, and fragments thereof.

5. (Original) The implant of claim 3, wherein the growth factor is selected from the group consisting of a TGF-β, bone morphogenic protein, fibroblast growth factor, platelet-derived growth factor, vascular endothelial cell-derived growth factor, epidermal growth factor, insulin-like growth factor, hepatocyte growth factor, and fragments thereof.

6. (Original) The implant of claim 5, wherein the growth factor is autologous.

7. (Original) The implant of claim 3, wherein the glycosaminoglycan is selected from the group consisting of heparan sulfate, heparin, chondroitin sulfate, dermatan sulfate, keratin sulfate, hyaluronan, and combinations thereof.

8. (Original) The implant of claim 3, wherein the cell type is selected from the group consisting of osteocytes, fibroblasts, stem cells, pluripotent cells, chondrocyte progenitors, chondrocytes, osteoclasts, osteoblasts, endothelial cells, macrophages, adipocytes, monocytes, plasma cells, mast cells, umbilical cord cells, leukocytes, stromal cells, mesenchymal stem cells, epithelial cells, myoblasts, and bone marrow cells.

9. (Original) The implant of claim 1, wherein the foam component is present in one or more layers.

10. (Original) The implant of claim 9, wherein adjacent foam layers are integrated with one another by at least a partial interlocking of pores.

11. (Original) The implant of claim 1, wherein the reinforcing component is present in one or more layers.

12. (Original) The implant of claim 9, wherein separate foam layers are constructed of different polymers.

13. (Original) The implant of claim 12, wherein the properties of the foam component vary throughout a thickness dimension of the implant.

14. (Original) The implant of claim 13, wherein outer layers of the implant have a greater overall pore volume than does an inner region thereof.

15. (Original) The implant of claim 13, wherein an inner region of the implant has a greater overall pore volume than do outer layers of the implant.

16. (Original) The implant of claim 14, wherein the concentration of the biological component is greater in the outer layers than in the inner region.

17. (Original) The implant of claim 15, wherein the concentration of the biological component is greater in the inner region than in the outer layers.